

NJ TOXICS REDUCTION WORKPLAN for NY-NJ HARBOR

AMBIENT WATER QUALITY SAMPLING

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OBJECTIVES

- 
- Determine concentrations/mass of the major contaminants of concern at various locations within the Harbor complex
 - Determine how the major contaminants are distributed in ambient waters (dissolved vs suspended sediment fractions)

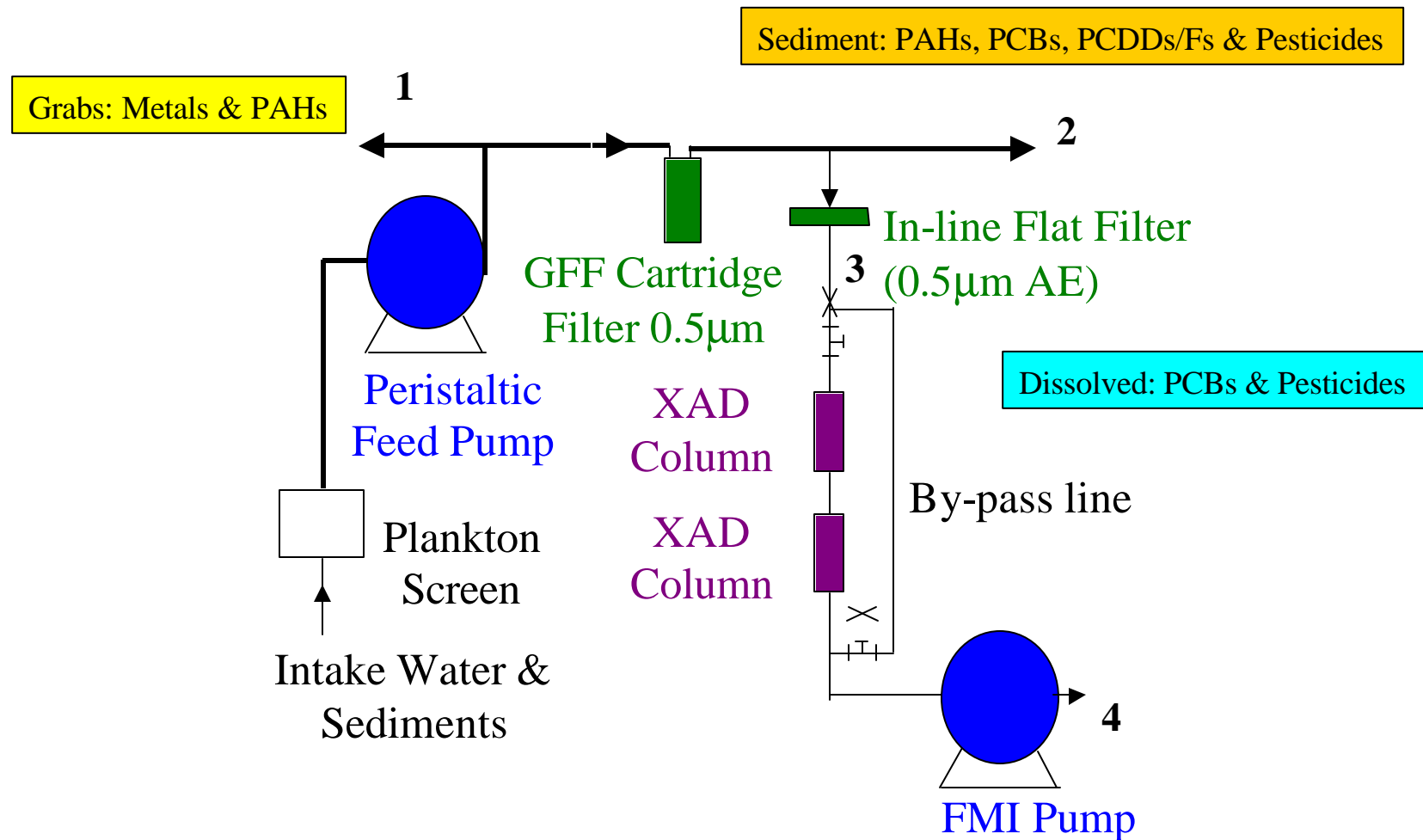


- Determine how water column contaminants contribute to contaminated sediment in the Harbor (correlate hydrodynamics to water and sediment quality)
- Identify the major sources of the contaminants and quantify their relative contribution to Harbor sediment contamination

BENEFITS

- 
- First Comprehensive Baseline 'State-of-the-Science' Chemical Data Set for the Harbor Complex – Facilitates the Assessment of the Effectiveness of Future Remediation/Restoration Efforts
 - Together with the Hydrodynamics Measurements Facilitates the Development of Predictive Tools (Models)
 - Facilitates the Track-Down of Sources Contributing to Harbor Sediment Contamination & Quantifies their Relative Contribution
 - Provides a Framework for Decision Making and Management

STEVENSON-TOPS Configuration

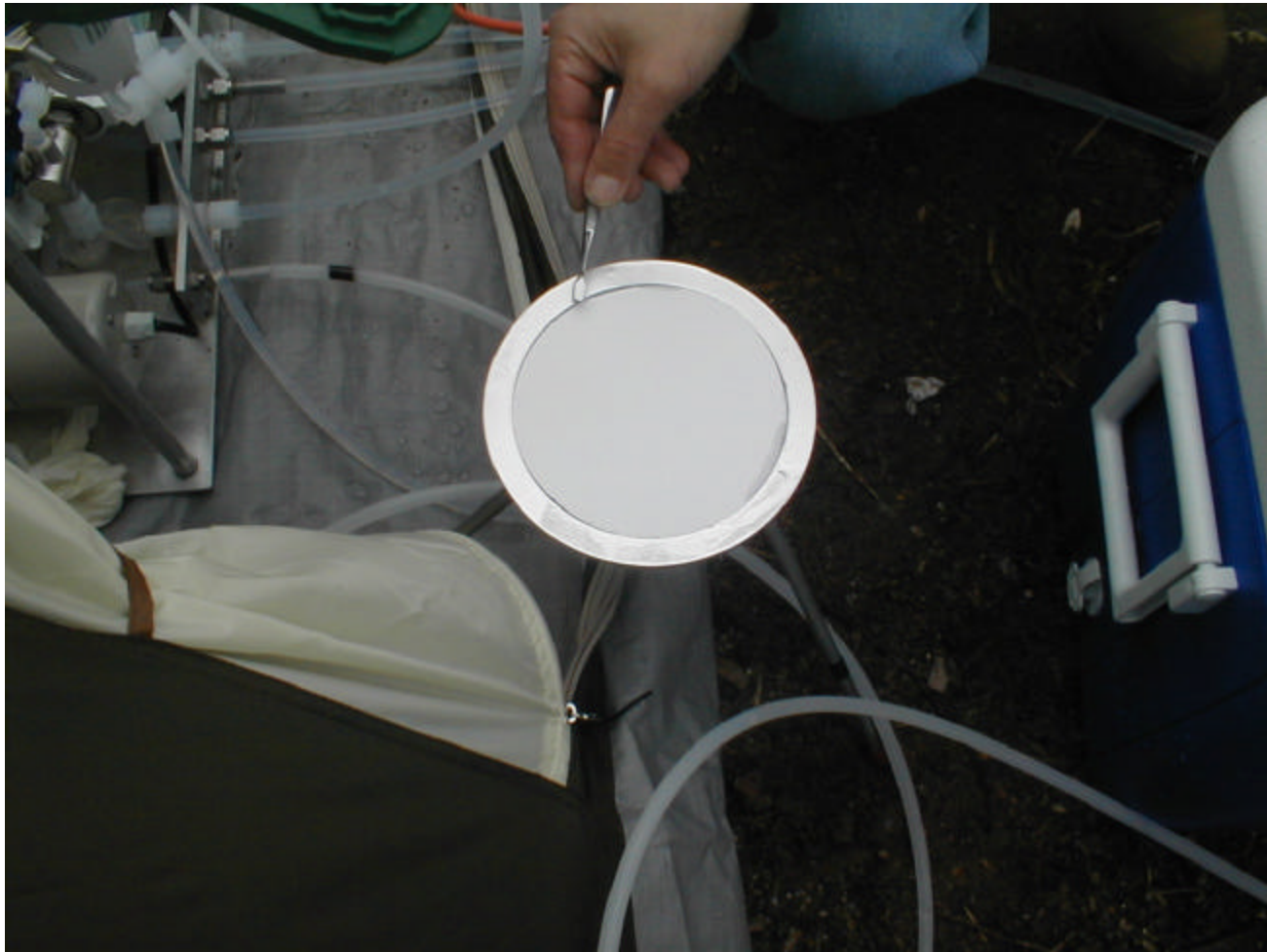




CANISTER FILTER



FLAT FILTER BEFORE

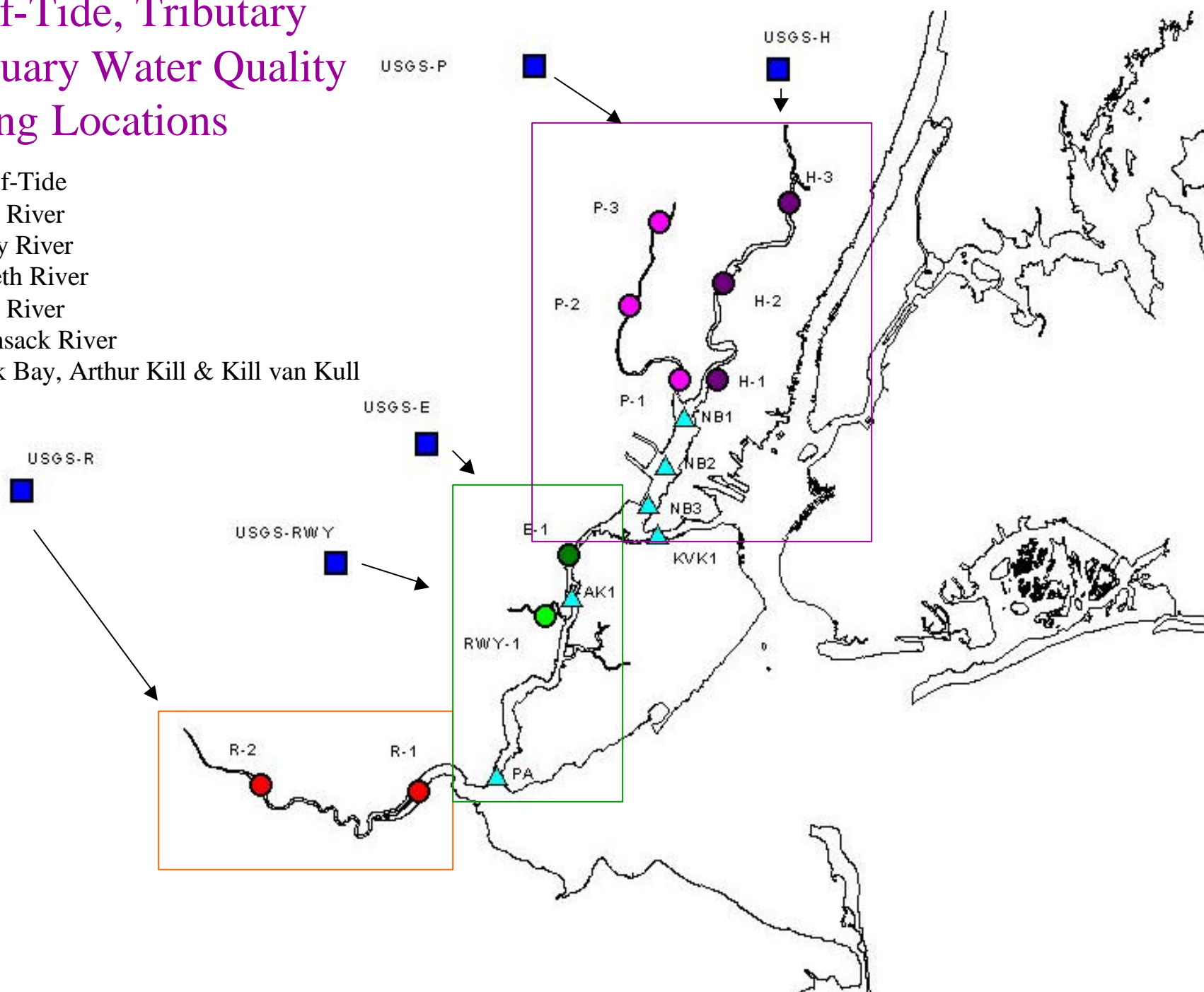


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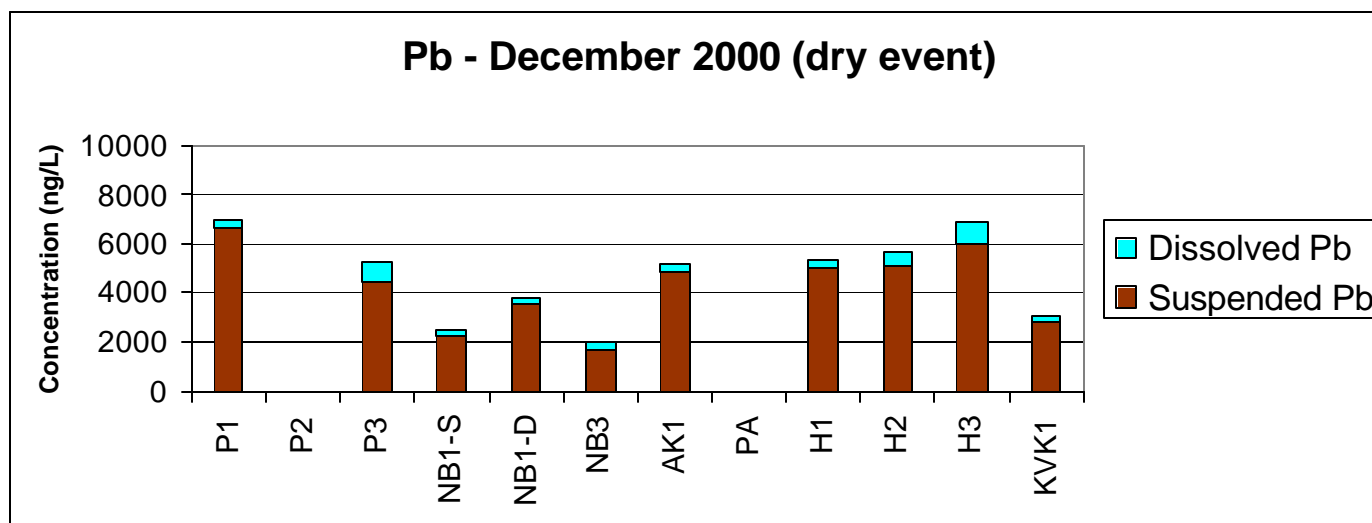
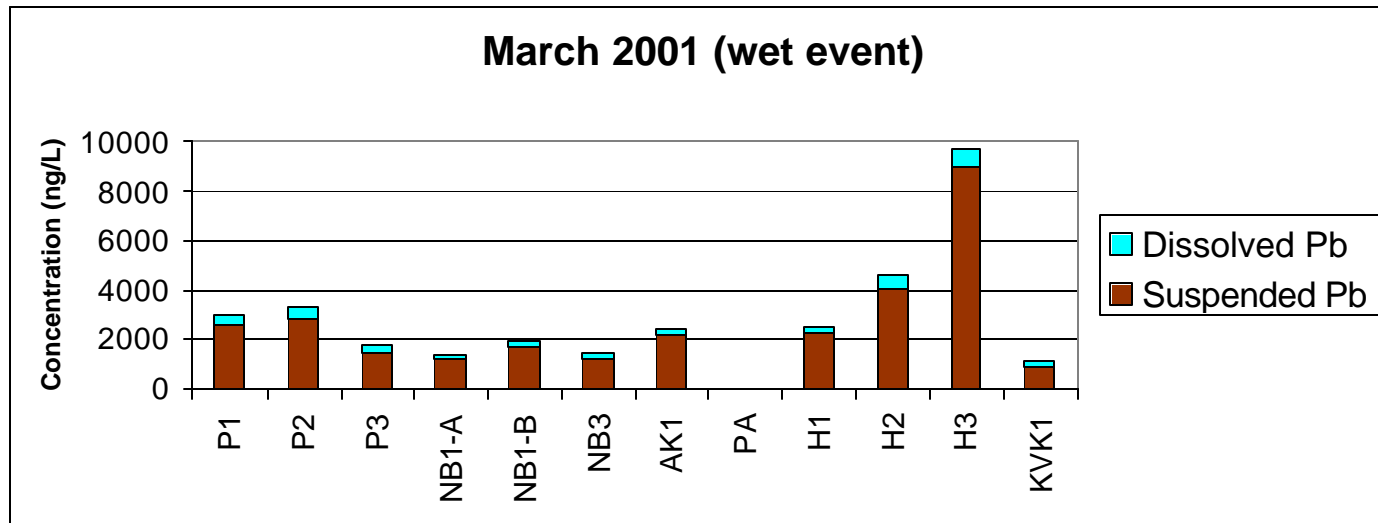


Head-of-Tide, Tributary and Estuary Water Quality Sampling Locations

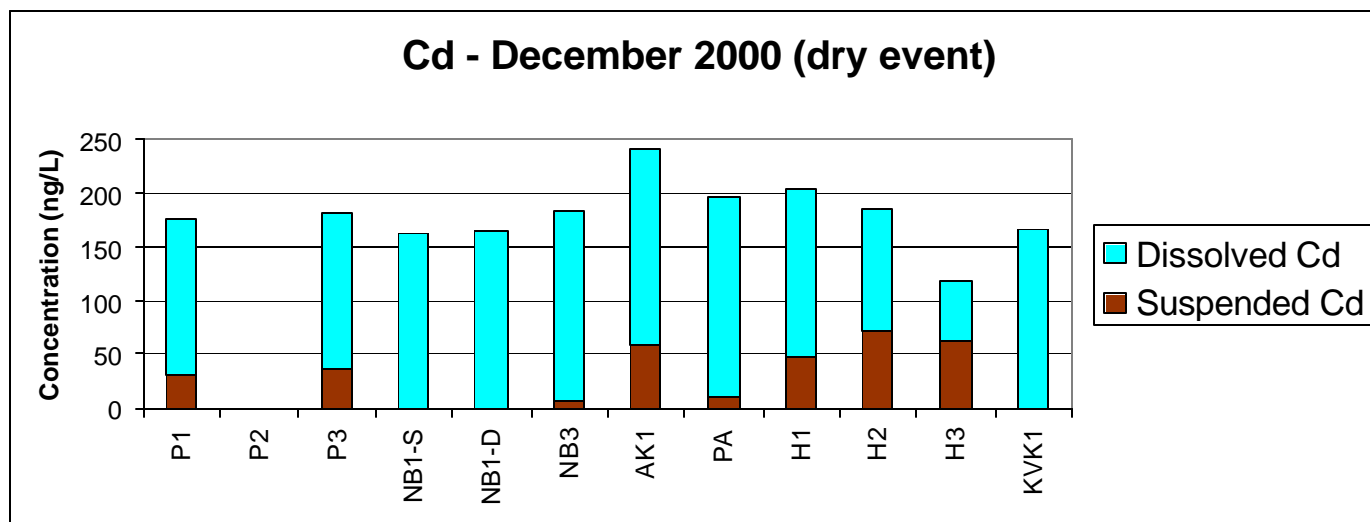
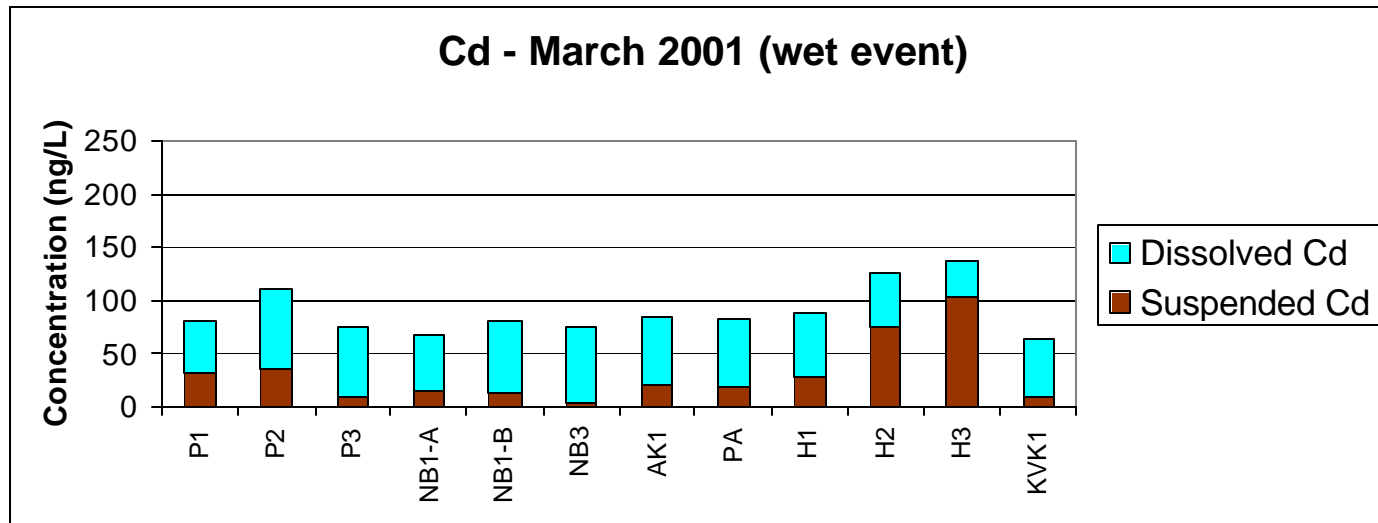
- Head-of-Tide
- Raritan River
- Rahway River
- Elizabeth River
- Passaic River
- Hackensack River
- ▲ Newark Bay, Arthur Kill & Kill van Kull



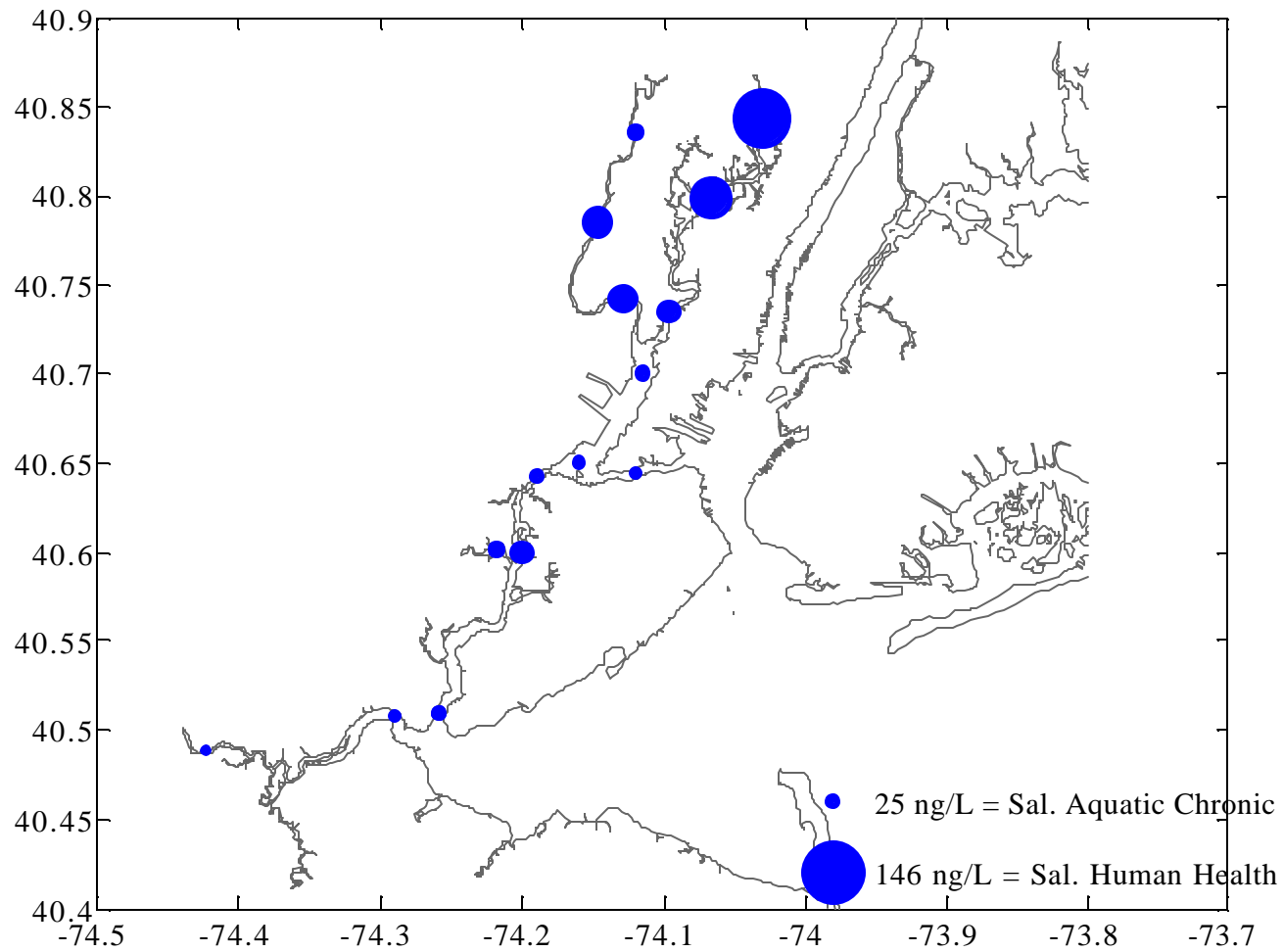
Pb - Dissolved vs Suspended



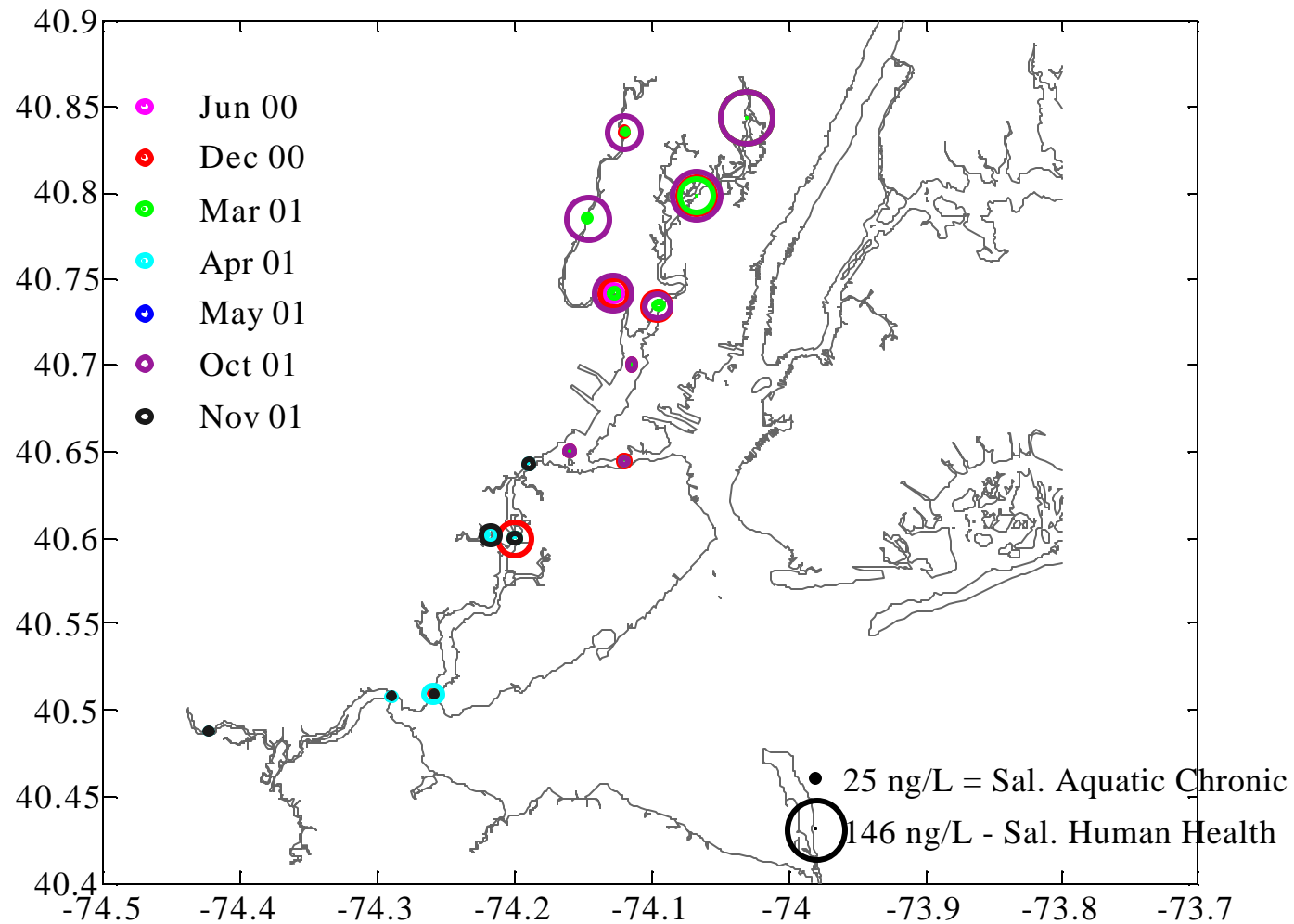
Cd - Dissolved vs Suspended



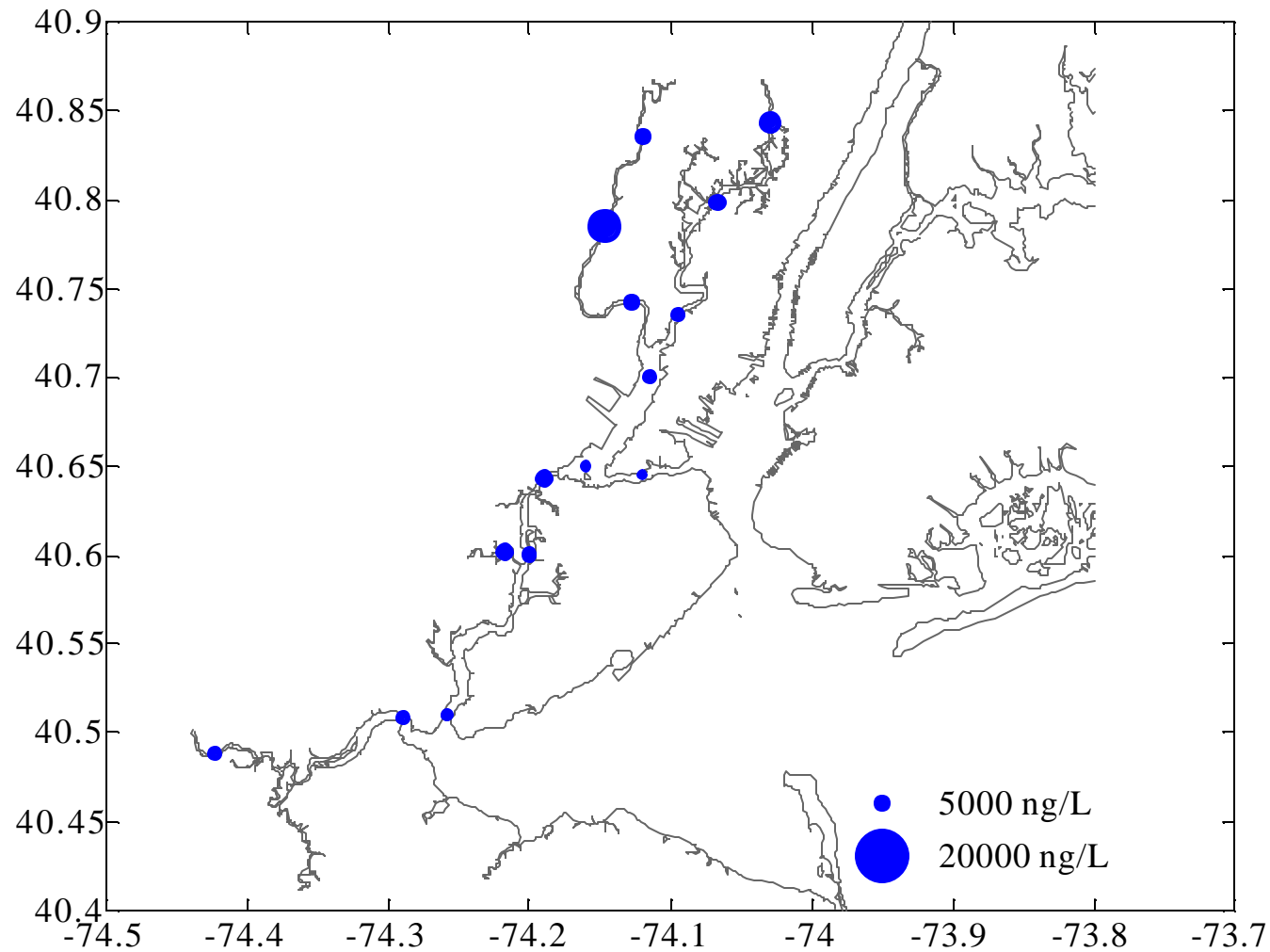
Total Hg (ng/L)

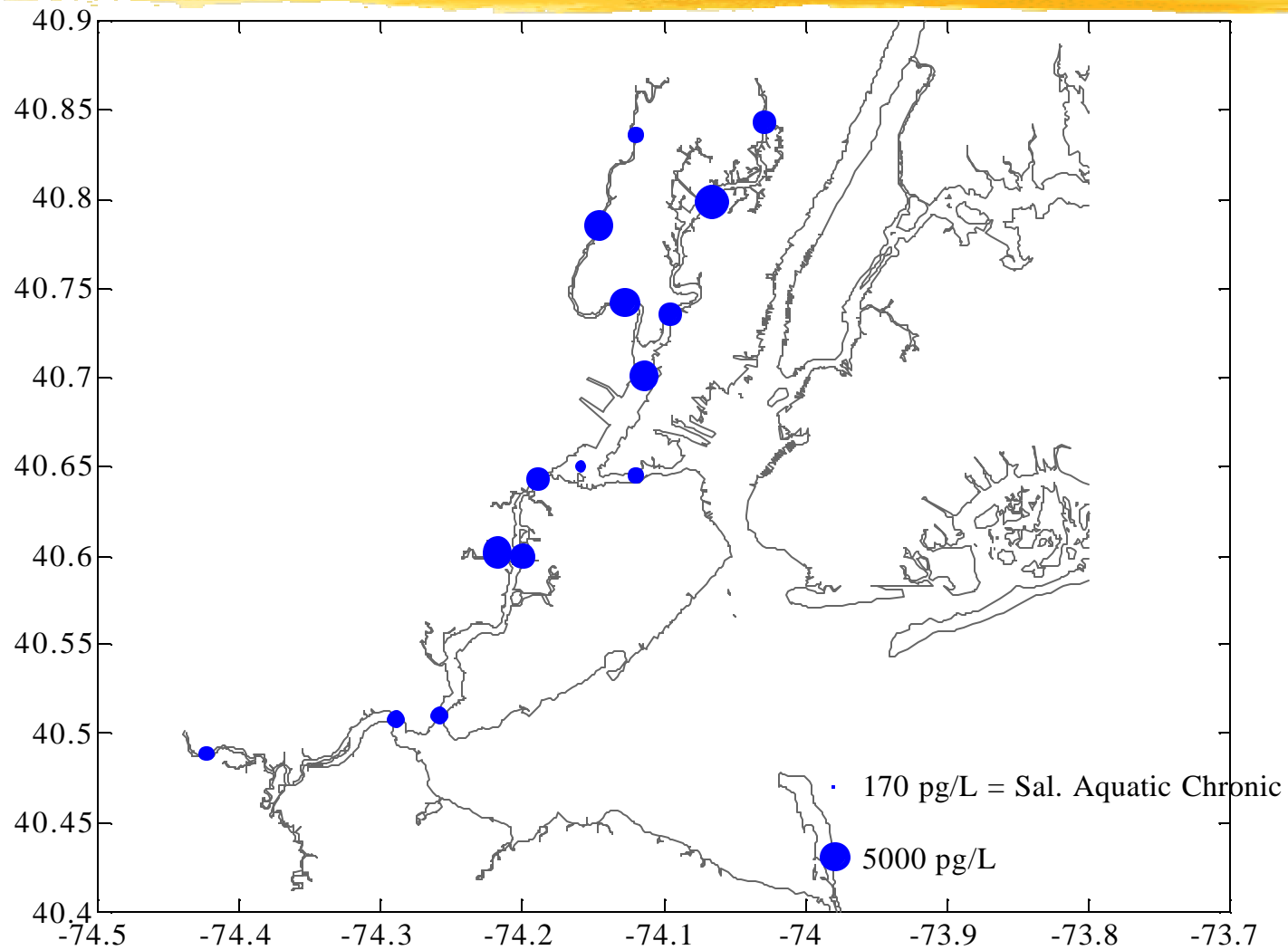


Total Hg (ng/L)

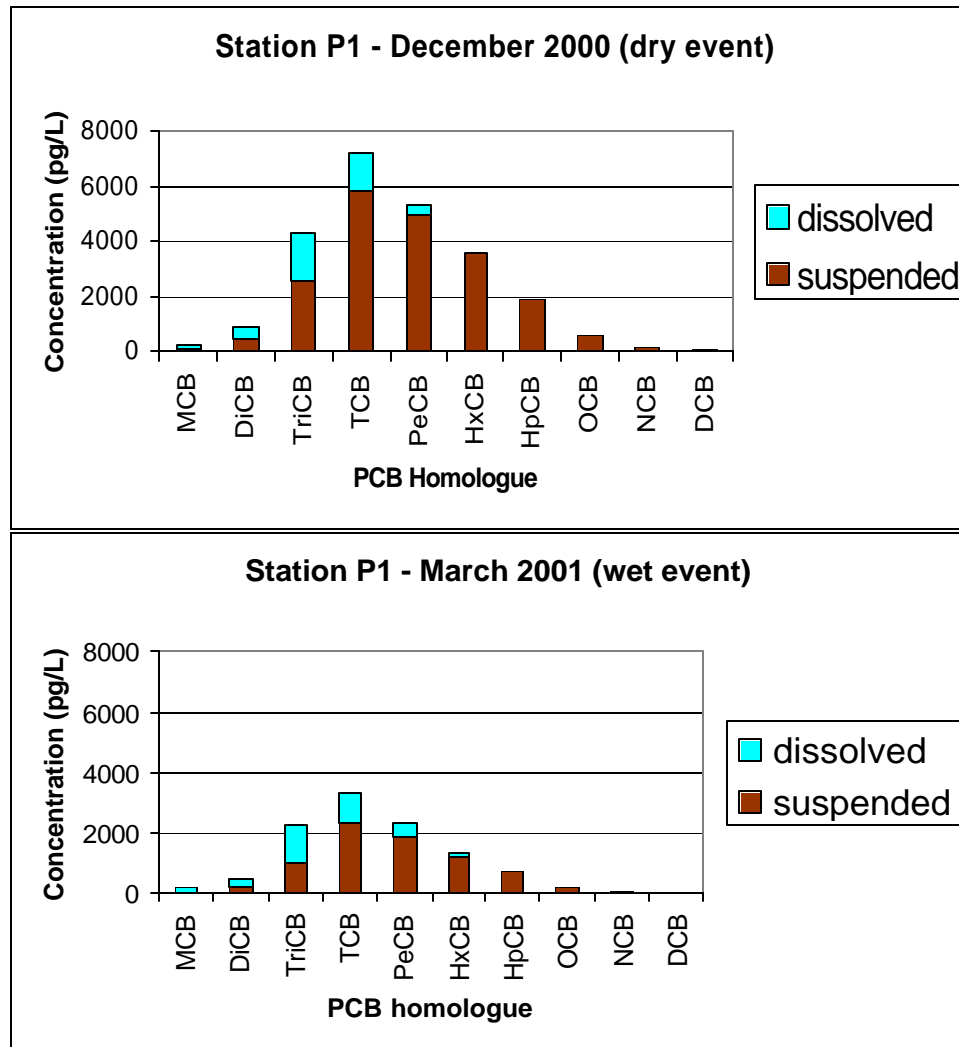


Total Pb (ng/L)

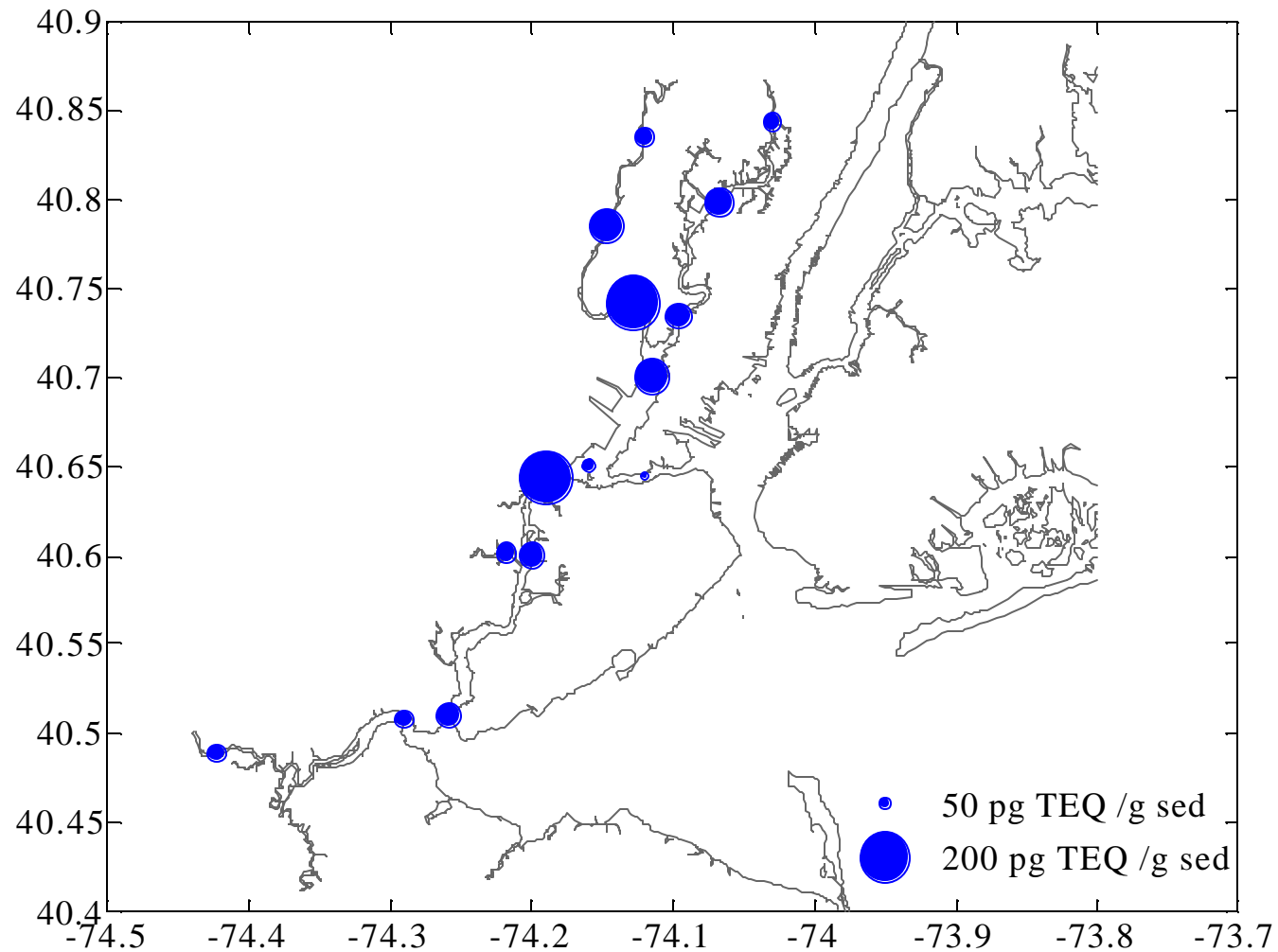


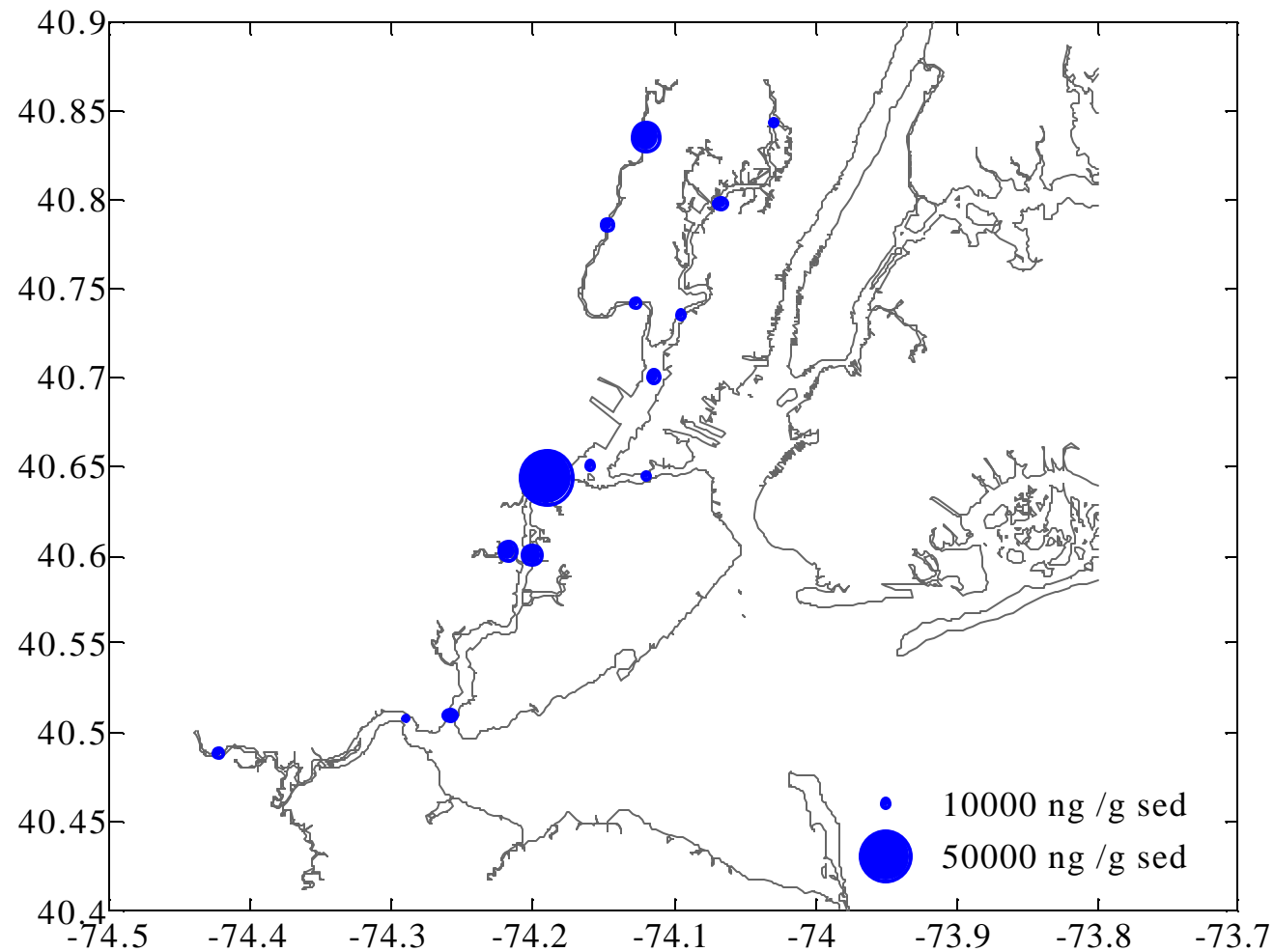


PCB Partitioning

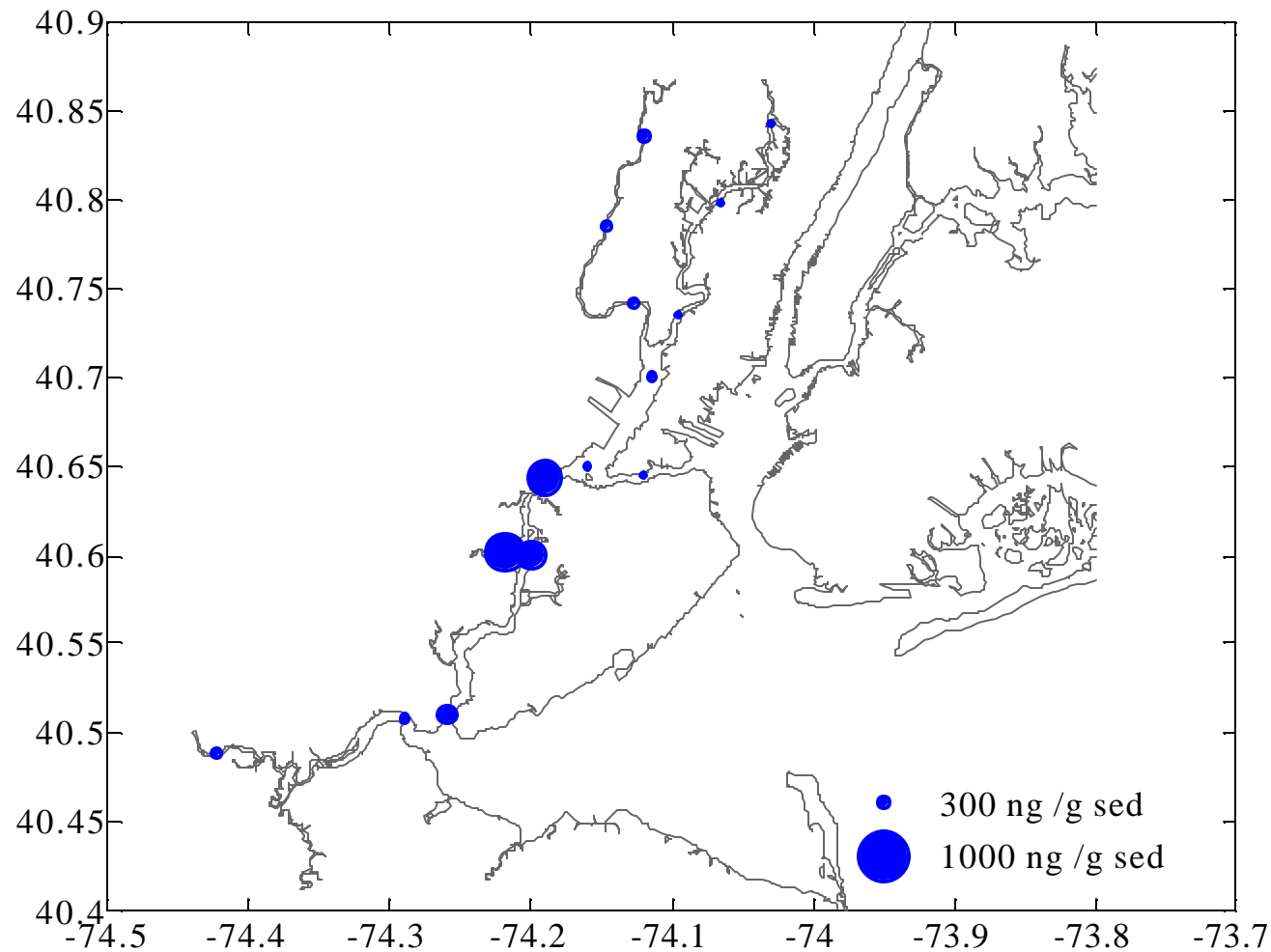


Total TEQ Dioxins & Furans





Total DDT and Metabolites in suspended phase



NEXT STEPS

- Determine how contaminants contribute to contaminated sediment in the Harbor (correlate hydrodynamics to water and sediment quality).
- Identify major sources and quantify their relative contribution to Harbor sediment contamination:
 - POTWs
 - CSOs/SWOs
 - Tributary HOT
 - Atmospheric Deposition

Historical Bottom Sediment
Contamination (hot spots)

Landfills

Industrial Sites

Spills

Others.....